

# Interactions between Disease, Nutrition and Age: Consideration for Hospitalized Patients

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Many societies worldwide have experienced a considerable increase in the number of older people and the number is growing rapidly and looks set to continue to increase further in the future [1]. With advancing age there is a high incidence of chronic diseases, and evidence points to the importance of nutrition in the development, susceptibility and outcome of these diseases. There is also a strong body of evidence to suggest that good nutrition contributes to the health and well-being of elderly people and to their ability to recover from illness [2]. There is still, however, evidence that undernutrition is prevalent and largely unrecognized in older people especially in presence of disease [3].

For example studies have shown that older patients have poor nutritional status prior to hospital admission [4]. Their nutritional status is likely to deteriorate further as the result of the catabolism associated with the acute illness [3,5]. During recuperation and rehabilitation nutritional depletion, however, may be more serious than during acute illness, since rehabilitation periods may extend over weeks and months, and deterioration in nutritional status although less marked than in the early catabolic phase may be greater overall [6]. With development of undernutrition a vicious circle develops in which older people develop recurrent illnesses leading to further undernutrition [4,5]. This continuous erosion of nutritional reserves as a result of inflammation leads to metabolic, physiological and functional impairments which might be responsible for the poor clinical outcome associated with acute and chronic disease [7].

So why the prevalence rates and impact of undernutrition among patients admitted to hospitals reported in different studies have not changed over the years? This doesn't however imply failure to prevent or treat undernutrition but rather reflect complex interactions between disease and undernutrition and more importantly the difficulty of separating disease from undernutrition, and identifying their individual effects on ageing patient's outcome. This challenge is partly due to the lack of "gold standard" for determining nutritional status because (a) there is no universally accepted definition of undernutrition, (b) all current assessment parameters are affected by age-related changes, disability, illness and injury, (c) and it is widely appreciated that a finding associated with one can confound detection of the other and that either improvement or deterioration in one influences the other [8-10]. This problem is compounded further by the fact that mild sub-clinical nutritional deficiencies, are known to be common even in relatively healthy persons [11].

Although many studies over the years have highlighted some of the above challenges in understanding the interaction between nutrition, ageing and disease we still lack robust evidence to guide management. One way forward however is to find a valid, reliable and a practical way of measuring ageing patient's nutritional status in routine clinical practice. The second is to determine the optimal timing, route and composition of nutritional therapy relative to a patient's metabolic stress, age and specific illness.

The evidence for whether the relationship between undernutrition and the poor outcome in older patients is causal one or a mere association is still incomplete and need further research. The answer can only be provided through powerful intervention trials with proper concealed allocation and blinding of treatment and focusing on

outcome measure relevant to the patients and the health community including service providers.

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